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Broad Management Options. Areawide Waste Treatment Management Plan for the Greater Houston Area (Section 208, P.L. 92-500)

Houston-Galveston Area Council, TX

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This is a follow up to previous reports prepared for the management portion of the "208" project, specifically the Management Assessment, July 1977 report. Building upon those earlier steps, this report describes the present management framework and then develops four (4) optional management system types, which are:

(1) I. State-Centered Approach
(2) II. Regionalized System
(3) III. Watershed System
(4) IV. Coordinated Public System

The goal of this options report is to stimulate discussion and enable the H-GAC Executive Committee and other "208" participants to understand the options from which preferred alternatives will be further developed. It should be noted that the management/institutional alternatives discussed in this report are purposely broad in order to allow inclusion of a variety of strategies that could meet the management and institutional requirements of the "208" program.

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JULY 1977

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BROAD MANAGEMENT OPTIONS

AREAWIDE WASTE TREATMENT MANAGEMENT PLAN
FOR THE
GREATER HOUSTON AREA
(SECTION 208, P.L. 92-500)

JULY 1977

REVISED NOVEMBER 1977

PREPARED FOR THE HOUSTON-GALVESTON AREA COUNCIL
BY ARTHUR YOUNG AND CO./TEAM FOUR, INC.

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CHAPTER I - INTRODUCTION

General

Previous reports prepared for the management portion of this project have documented the roles and powers of the major state and local agencies which are involved in wastewater management. The previous report, Management Assessment, July, 1977, looked specifically at the required 208 management functions and assessed how those functions were and could be distributed among existing agencies and entity types. Thus a first effort at matching functions and agencies has been made. Building upon these earlier steps, this report describes the present management framework and then develops four (4) optional management system types which comply with 208 program requirements. The conceptual systems to be discussed are as follows:

I. State-Centered Approach

II. Regionalized System

III. Watershed System

IV. Coordinated Public System

Simply stated, four (4) approaches are developed which project various combinations of existing agencies and agency types (at times with new powers) to fulfill the required 208 functions. Each option is described in concept as are its basic strengths and weaknesses. Functional matrices are used along with the text to assist in explaining each option. The allocated functional requirements used in this report are derived from Federal Water Pollution Control Act Amendments Section 208(c)(2)(A)-(I) as well as Section 208(b)(2) and 204(b)(1)(A)-(B). Throughout the management analysis, these legal requirements have been grouped into the following ten (10) logical management functions:

1. Planning

2. Operation and Maintenance of Facilities

3. Design and Construction of Facilities

4. Finance

5. Permitting and regulation of Point Sources

6. Permitting and Regulation of Nonpoint Sources

7. Standard Setting

8. Enforcement

9. Monitoring

10. Management and Coordination

These functions are defined and discussed at length in the Management Assessment report of July, 1977.

The goal of this Options report is to stimulate discussion and enable the H-GAC Executive Committee and other 208 participants to understand the options from which preferred alternatives will be further developed. An evaluation and public review process will eliminate and refine options and alternatives to produce the final management alternatives for Executive Committee selection. Listed below are the basic management agencies and entity types who are most likely to perform specific functions in various broad options and that have a viable role in implementing the 208 plan.

1. Federal Government

2. State: Texas Department of Water Resources (TDWR)

3. Gulf Coast Waste Disposal Authority (GCWDA)

4. Houston-Galveston Area Council (H-GAC)

5. River Authorities

6. Local Government: Cities and Counties

7. Special Districts

In some cases an entity type is indicated--the functions for which may be a new entity or an existing agency sometimes with restructured organization and powers.

Many of the other federal, state, regional, and local agencies documented but not listed above will continue to perform their current functions. This includes Harris County Flood Control District, Harris-Galveston Coastal Subsidence District, Texas Department of Health Resources, and the U. S. Army Corps of Engineers.

It should be noted that the management/institutional alternatives discussed in this report are purposely broad in order to allow inclusion of a variety of strategies that could meet the management and institutional requirements of the 208 program. It is anticipated that the process of evaluating these broad management options and then refining them into specific alternatives will produce an acceptable management plan for this region--a plan that matches the most desired features of the conceptual options within the realities of the region's existing legal, financial, political, and institutional parameters.

CHAPTER II - PRESENT MANAGEMENT SYSTEM

General

At present, the designated area does not have a management system that meets the requirements of P.L. 92-500, Section 208. The Management Assessment report detailed the present system's response to the 208 functions. This report noted that there are agencies generally performing the required 208 functions. They are doing so sometimes in conflict with each other or in duplication with another's efforts. At other times they are unable to adequately perform these functions, such as treatment of wastewater in excess of facility capacity. In addition, there is no permanent coordinated management system to which these agencies are contractually tied. Currently, there is no clear allocation of functions to implement a 208 plan. By looking at Exhibit I - Present Management System, especially noting the individual functions, these problems of voids and duplication become quite clear. Presented below are descriptions of present functions:

Planning

Planning is an activity which is now undertaken by nearly all entities in the designated area. While the federal government's participation is primarily in the area of funding, all the other agencies from the state to special districts to the smallest municipalities undertake planning activities within their purview which affect water quality. While this division of responsibility may still occur in the future, the fact is that, at present, it is a system without coordination or regional perspective.

Operation/Maintenance - Facilities

The 208 area now contains a variety of wastewater treatment facilities. They range from the large wastewater treatment plants operated by the Gulf Coast Waste Disposal Authority and the City of Houston to small district plants that service new subdivisions and developments in the growth sectors of the region. The variety of these facilities is symptomatic of the wide range of treatment quality and cost. In addition to the service treatment that is performed by these operating and maintenance agencies, septic tanks are commonly used for residential sewage disposal in the rural parts of the region and in some suburban areas. Thus the

region is dotted with a mixed variety of facilities both in terms of capacity, operators, and capability. This produces great disparity not only in cost but also in the quality of service throughout the 208 region.

Design/Construction - Facilities

The present design and construction of facilities is linked to the operation and maintenance function. Thus, the design and construction of facilities is a power granted to and presently utilized by all facility implementers in the region. The State does provide the review and approval function of facility plans and operation; however, as is the case in almost all other parts of the country, the detailed design and construction of wastewater facilities remains a local function. This function is normally undertaken either by agency staff or engineering consultants who are called on a case-by-case basis to assist in the development and design of facilities.

Finance

The financing of facilities is a complex as well as costly process. Throughout the Greater Houston 208 area, a variety of financing techniques are utilized when treatment facilities are required.

For example, the Gulf Coast Waste Disposal Authority, as well as municipalities, have the ability to issue municipal bonds that are exempt from federal income tax. These bonds provide a means for the development of treatment facilities for industrial and municipal waste at lower costs than would be anticipated were they to be handled by a user entity itself. At the residential scale, new subdivision developments provide water and sewer facilities through water districts and again have special taxing authority within their service areas with the ability to issue long-term municipal bonds to finance the costs of their facilities. Homeowners pay the debt service on these municipal bonds through property taxes and users fees. In addition to these localized forms of financing, up to seventy-five percent of the funds for qualified treatment facilities is provided by EPA grants. It is not anticipated that the present system, which relies upon the major share of financing from outside the region, would be changed in the future. For this reason a critical point in the development of a logical regional treatment system lies with the State, which has the responsibility for prioritizing its allocation of federal funds for wastewater treatment facilities within the state.

Permitting/Regulation - Point Sources

The regulation of point sources has been and is expected to continue to be handled by the State. Under the NPDES permit system, the State, most likely through the new Department of Water Resources, will administer this federally chartered program, issuing permits for both cities and industries who are dischargers of treated wastewater. Local input into the permitting and regulation of point sources is limited to review and comment.

Permitting/Regulation - Nonpoint Sources

In contrast to the point source regulation area, the nonpoint source permitting and regulation process, at present, is a highly complex one with many entities pursuing different goals. Local government is a major participant in the nonpoint source process through regulation of septic tanks and erosion and sediment control. The State performs some regulatory functions in the nonpoint source area. For example, the Texas Department of Health Resources exercises responsibility in solid waste disposal and has a role, therefore, in nonpoint control. Solid waste disposal is also an area where the Gulf Coast Waste Disposal Authority has authority to act. Another way that the nonpoint source permitting and regulation authority is exercised is the review of proposed projects. The H-GAC, at present, has an environmental review which does interact with the nonpoint regulatory function. In reviewing the present nonpoint source regulation process, it is clear that it is not an integrated part of any overall program geared to improve water quality. In addition, there are gaps in the utilization of authority to control the various nonpoint source problems in the region. In some cases authority is not being utilized at all, and in other cases, it is not being effectively used to prevent water quality impairment.

Standard Setting

At present, the standard-setting function is the joint responsibility of the federal government and the State. These entities establish water quality standards. While there is some language in the State statutes which gives limited authority to the Gulf Coast Waste Disposal Authority, this agency has not undertaken to enact standards. The Authority has followed the pattern established by other local entities and looked to the State and the federal governments for the development of the stream water quality and effluent standards.

PRESENT MANAGEMENT SYSTEM

	PLANNING	OPERATIONS/ MAINTENANCE	DESIGN/ CONSTRUCT	FINANCE	PERMITTING/ REGULATION (POINT SOURCE)	PERMITTING/ REGULATION (NONPOINT SOURCE)	STANDARD SETTING	ENFORCEM'T	MONITOR'G	MANAGEMENT COORDINAT'N
FEDERAL				*	*		*	*	*	
STATE TEXAS DEPARTMENT OF WATER RESOURCES	*		✱	✱	✱		✱	*	*	*
GULF COAST WASTE DISPOSAL AUTHORITY	*	✱	✱	✱				*	*	*
H-GAC	✱									*
RIVER AUTHORITY	*	✱	✱	✱				*	*	*
LOCAL GOVERNMENT (CITY & COUNTY)	*	✱	✱	✱				*	*	*
CITY OF HOUSTON	*	✱	✱	✱				*	*	*
SPECIAL DISTRICT	*	✱	✱	✱				*	*	*

✱ MAJOR RESPONSIBILITIES

* PARTIAL RESPONSIBILITIES

- DOES NOT MEET 208 REQUIREMENTS
- DISJOINTED ALLOCATION OF FUNCTIONAL RESPONSIBILITY
- LACK OF OVERALL MANAGEMENT AND COORDINATION

EXHIBIT I

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Enforcement

In the enforcement there are a multitude of agencies collecting and evaluating information and processing suits for noncompliance of permits. The Management Assessment report detailed how these enforcement activities are undertaken. While it may be undesirable or impossible to totally eliminate some of the entities from the enforcement process, a number of improvements in coordination and enforcement activities are necessary in order to meet the 208 goals. A coordinated enforcement program where clear lines of authority are drawn should be tied into overall coordination improvements.

Monitoring

There are administrative problems in this function that are very similar to the enforcement activities. A variety of agencies are presently undertaking monitoring activities with both voids and duplications. Monitoring, as with enforcement, is undertaken by almost everyone in the region and again in a discordant way. Monitoring programs for various agencies overlap and are at times undertaken for particular reasons which, when added up, do not produce a systematic and economically sound regional program. In order to meet the goals of 208, it has been suggested and recognized by many that a more efficient, economically sensible system of monitoring and enforcement will have to be agreed upon. The present system is complicated, inefficient, and uncoordinated.

Management/Coordination

Depending upon how one views the present state of affairs, either no one or everyone is presently involved in management/coordination. The 208 program at H-GAC has helped to bring the principal actors together. The question of what will happen to continue this coordination after the 208 plan is developed is a valid concern. It is obvious that many of the special meetings, committees, and interfaces among agencies will probably collapse after adoption of a 208 plan. Not surprisingly, there is no management and coordination system other than that required by 208. While the higher levels of government do provide a certain degree of continuity, there is no system outside the 208 program to provide an ongoing continuity for water quality management on a regional basis. The matrix (Exhibit I) could be either left blank or, as it has been in this case, filled to indicate that there are many involved entities. It should be noted that there is no overall management system under present conditions.

CHAPTER III - THE STATE-CENTERED APPROACH

General

In a memo of February 15, 1977, the Texas Water Quality Board (TWQB) proposed that the State be placed in a dominant position in the Greater Houston 208 Area management structure. The TWQB provided guidelines that suggested the State would make or oversee all 208 policy and planning decisions. The State, through its Water Resources Department, would set priorities on a statewide basis and allocate construction grant funds for municipal facilities according to its assessment of statewide needs. In addition, TWQB would continue to handle the NPDES permitting and enforcement function. To the extent it deemed appropriate, TWQB would consult with local and regional planning entities to determine what policies for wastewater treatment should be adopted for the area.

TWQB would continue to be uninvolved in the day-to-day operation of sewer services. It would oversee designated local or regional Treatment Works Management Agencies (TWMAs) that would provide such services. TWMAs would finance, construct, own, and operate wastewater treatment facilities at TWQB's direction. Potential TWMAs include GCWDA, the river authorities, cities, and water districts.

The TWQB memorandum predates the consolidation of the various agencies at the State level into the Texas Department of Water Resources (TDWR). When viewed in terms of a State-centered management option, the TDWR could, as proposed in the TWQB memorandum, perform the planning function; however, as is recognized in that memorandum, the function could be one where the State provides a supervisory role and, in effect, contracts out the planning function either to regional bodies such as the Gulf Coast Waste Disposal Authority, the Houston-Galveston Area Council, local governments, or even special districts. Thus, the consolidation of planning authority at the State level given a supervisory role might not necessarily lead to an assumption of the planning function.

In the area of operations and maintenance, neither the memorandum nor this Management Options report suggests that the State, through the Department of Water Resources or another state agency, undertake the traditionally localized operating and maintenance function. The focus for the operation and maintenance function is centralized management which would be at a regional level through designated regional Treatment Management Agencies (TWMAs).

STATE CENTERED APPROACH: TDWR

	PLANNING	OPERATIONS MAINTENANCE	DESIGN/ CONSTRUCT	FINANCE	PERMITTING/ REGULATION (POINT SOURCE)	PERMITTING/ REGULATION (NONPOINT SOURCE)	STANDARD SETTING	ENFORCEMENT	MONITORING	MANAGEMENT COORDINATION
FEDERAL				*	*		*	*	*	
STATE TEXAS DEPARTMENT OF WATER RESOURCES	✱		✱	✱	✱	*	✱	✱	✱	✱
REGIONAL AGENCY	*	✱	✱	✱		✱	*	✱	*	*
LOCAL GOVERNMENT (CITY & COUNTY)	*					✱				
SPECIAL DISTRICT	*									

✱ MAJOR RESPONSIBILITIES

* PARTIAL RESPONSIBILITIES

- CENTRALIZATION OF 208 CONTROL AT STATE LEVEL
- TDWR RESPONSIBLE FOR PLANNING, PERMITTING, ENFORCEMENT AND MANAGEMENT
- REGIONAL AGENCY RESPONSIBILITY FOR SPECIFIC FUNCTIONS SUCH AS: DESIGN AND CONSTRUCTION, OPERATION AND MAINTENANCE, FINANCE, AND NON-POINT CONTROL

EXHIBIT 11

Such an approach could include a consolidation of numerous water districts. Agencies such as Gulf Coast Water Disposal Authority could also provide treatment facilities on a more regionalized basis for municipalities, growth areas, and industrial complexes.

Another approach under the State option would be the continuation of a variety of what were called the TWMAs at the local level. These agencies would continue to provide the services that they are now providing. Design, construction, and finance, which are normally tied to operation and maintenance, would continue under this option to be performed by those agencies that are presently operating treatment facilities. The major difference under this State-centered approach would be that there would be increased supervision at the State level through the Department of Water Resources and that those agencies who are operating at the local level, be they a regional agency with control over all treatment works or multiple treatment agencies, would be much more responsive to State priorities and direction.

The Texas Water Quality Board memorandum of February 15, 1977, concludes that nonpoint sources have not been shown to be a significant contributor to statewide water quality problems since the technical studies were based on literature values nonspecific for the Houston area. The technical studies concluded that nonpoint sources are, however, contributors to water quality problems in the Greater Houston 208 Area. Therefore, the allocation of management authority within the 208 program for the permitting and regulation of nonpoint sources remains an important question to be resolved. In outlining the State-centered option, nonpoint permitting and regulation would take place at the local government level where the problem is more readily apparent. However, a review authority could be retained at the State level to provide an oversight mechanism. Obviously, this particular allocation conflicts with the TWQB concept, but it does consolidate authority at least in a supervisory way at the State level, which is consistent with the overall management approach of this broad option. A number of other states have already moved toward an environmental review procedure at the State level in recognition of a need for specialized staff and protection of broader public needs. This proposal does envision the possibility of a similar approach being adopted in Texas in order to provide a State-level control over water quality problems that are caused by nonpoint sources.

The standard-setting function has not been changed from the present in this State-centered option. This is a well-understood function that is now undertaken by both the federal government and State and, therefore, has not been in any way altered.

The permitting and regulation of point sources would not be affected in any substantial way under the State-centered option. The State, through the Texas Department of Water Resources, would continue to perform the major role of issuing NPDES permits and would be the federal government's main actor in this important functional area.

Enforcement and monitoring are two activities which, as has been stated earlier, require careful integration and coordination. Under the State-centered option, the TDWR would continue to be responsible for all the work related to the enforcement and monitoring function. The State could, however, assign specific responsibilities to a regional entity to perform monitoring and enforcement activities at a local level. This option would place the primary responsibility and the expectation for primary monitoring and enforcement at a State level.

Management and coordination, under the State-centered option, would be centered in the Texas Department of Water Resources. This agency would make determinations on a number of issues ranging from the maintenance of data to the issuance of permits and monitoring of in-stream and effluent quality, and most importantly, the establishment of priorities for the award of federal construction grants. In this option, overall planning, permitting, and policy-making decisions would be centered in the State. Thus, the coordination of all local activities would be handled through the Texas Department of Water Resources. This does not, as has been stated earlier, negate the possibility of other agencies participating. It would be clearly understood that the State would have the dominant role in these functional areas and that local and regional participation would be of a support and assistance nature.

Comment

The range of problems associated with implementing this option could vary from simple to complex. Foremost is the region's concern with the potential delegation of local functions to the State. Public support for the centralization of authority at the State level also could be expected to be received with limited enthusiasm. The degree to which the existing system would have to change if more regionalization of treatment is desired could similarly produce many new financial and legal requirements. This option or parts of it must be carefully considered since the 208 technical goals may require more regionalized management approaches.

CHAPTER IV - A REGIONAL MANAGEMENT SYSTEM

General

Section 208 of P.L. 92-500 could also be satisfied by the development of a regional approach to water quality management. Under such an approach, a number of existing agencies or the creation of a new regional agency could meet the identified functional requirements of the Act and could provide the region with a mechanism to improve water quality. The basic goal for this concept of regionalization is to centralize, to the greatest extent possible, the water quality management process and also secure overall geographic coverage and technical competence. However, unlike the previous State-centered option, the locus for authority and control is in the region. The control could be vested in an agency that would be in the Houston area and not in Austin, Texas. Nevertheless, for both the State-centered option and this option, the goal remains centralization of authority and reduction in the number of water quality entities. There are, at present, a number of obvious candidates for the role of regional management authority; however, none of them, at present, has adequate legal authority or geographic coverage to totally satisfy the 208 requirements. The agencies that might be looked upon as the regional management agency include the following:

a) Houston-Galveston Area Council

b) Gulf Coast Waste Disposal Authority

c) San Jacinto River Authority

d) City of Houston

e) A new regional entity with specialized authority to handle the full range of 208 management functions. (The creation of a new entity is discouraged by both the EPA and the State).

In Exhibit III it is evident that from the first option to this regional option there is a movement of functional responsibility from the State down to the regional level. In the area of planning, the regional agency would assume the major role. It might contract out specific planning jobs to local governments, but it would remain the supervisory agency for all planning related to wastewater treatment. Unlike the first approach where the State is primarily responsible for the 208 functions of

EXHIBIT III

REGIONAL CONCEPT

	PLANNING	OPERATIONS MAINTENANCE	DESIGN/ CONSTRUCT	FINANCE	PERMITTING/ REGULATION (POINT SOURCE)	PERMITTING REGULATION (NONPOINT SOURCE)	STANDARD SETTING	ENFORCEMENT	MONITORING	MANAGEMENT COORDINATION
FEDERAL				*	*		*	*	*	
STATE TEXAS DEPARTMENT OF WATER RESOURCES	*		*	*	*		*	*	*	*
REGIONAL AGENCY	*	*	*	*	*	*	*	*	*	*
LOCAL GOVERNMENT (CITY & COUNTY)						*				

* MAJOR RESPONSIBILITIES
* PARTIAL RESPONSIBILITIES

- REGIONAL FOCUS FOR MAJOR 208 FUNCTIONS
- REGIONAL CONTROL OVER PLANNING, OPERATIONS AND MAINTENANCE, PERMITTING, ENFORCEMENT, MONITORING, MANAGEMENT AND COORDINATION
- USE EXISTING OR NEW REGIONAL AGENCY
- SHARE AUTHORITY OVER NON-POINT CONTROL WITH LOCAL GOVERNMENTS

planning, permitting, management/coordination; the regional approach unifies design, construction, operation, and maintenance under one regional entity. This, of course, would present a strong regional agency with clear authority in both planning and operations. This approach could have a strong impact on improving water quality in the region. Priorities and plans could be set and implemented at the regional level. The region might, given such centralization, move quickly toward solving its wastewater treatment problems.

Financial responsibility would not be changed greatly under this option. Finance remains a function that would require both State and federal participation because of their major programs that assist in financing plant construction. Nevertheless, under this approach the regional agency would have more direct involvement in presenting its funding priorities to the State.

The regional option could encourage more active participation with the State and EPA regarding the permitting and regulation of point sources. Under the approach in this option, permitting could receive more regional input with the concurrence of both the federal and State governments. Again, under the regional centralization concept, this could give the regional agency an increased effectiveness in dealing with water quality problems within the Greater Houston 208 Area. The important thing to note is that, by requiring more point source involvement of the regional agency, the region could be in a more positive position to encourage local entities to respond to water quality needs.

In the nonpoint control area, this option does not depart greatly from the previous one in that it shares authority among existing municipalities, counties, and the regional agencies. Thus, it recognizes the tradition that nonpoint regulation will remain basically with local government. It does suggest that the regional agency could be charged with the major responsibility for wastewater treatment. In addition, they would have the review authority to deal with the impact of development upon environmentally critical areas as well as those projects that would impact upon the regional agency's water quality management system. The extent of this review authority should be subject to further refinement and clarification.

The standard-setting function would remain one that is a State responsibility. The State Department of Water Resources would encourage the regional agency to cooperate in the development and review of standards. However, the major standard-setting function would reside within the Department of Water Resources.

The enforcement and monitoring functions, as has been stated before, should be more integrated. However, under the regional option as proposed in this report, the region would become a co-actor with the State in responsibility for enforcement and monitoring. This cooperative effort would be focused at centralization and enabling response by either entity to permit violators. Some monitoring would be undertaken by both the federal and State governments, but the day-to-day monitoring necessary for enforcement of the various parts of the management system would be a prime responsibility of the regional agency. This would be responsive to local review and inputs.

Management and coordination would be a regional responsibility under this option. While other local entities might participate and would have an input in the development of regional plans and priorities, the primary responsibilities for ongoing management and coordination would be with the regional agency. The exact format which this agency might use in meeting the 208 requirements for participation from citizens and local elected officials is not, at this point, defined. However, it could be that a coordinating body would be established to provide local input on a review and comment basis to the regional agency.

CHAPTER V - A WATERSHED SYSTEM

General

Each stream in the Section 208 planning area forms part of a watershed drainage system. The land areas that feed water into those streams can be and have been defined. Pollution activities affecting the streams in these particular watersheds do not necessarily affect other watersheds. Thus, there is some technical logic in attempting to devise a management system based upon area-wide watersheds. These could either be existing river basin authorities or new entities which might be designated as sewer districts, as has been the case in other parts of the country. In devising such a system, it becomes possible to divide the functions in a number of ways. The matrix (Exhibit IV) that describes this option illustrates one assignment of the 208 functions.

In the designated wastewater planning area, given the fact that the problems of water quality may differ from watershed to watershed, different planning approaches and different planning concepts might be necessary for each sewer district. Thus, the planning concept that is shown in Exhibit IV revolves around the major responsibility for planning being given to the particular watershed district. This district could delegate portions of its planning authority, for example, in the urbanized portion of the district to the City of Houston. However, there is a necessity in the planning area, as well as in the overall management function, for coordination on a regional basis. One potential candidate for this planning and management role would be H-GAC. H-GAC could perform a coordinating role and serve as a focus for watershed districts in the sharing of planning information and implementation approaches. Another approach would have the State perform the coordination function on a statewide and regional level.

While the range of powers for these watershed districts could vary, the option shown gives the sewer district authority reaching beyond planning. The watershed option, following the example of the common sewer districts developed in other states, could actually operate, maintain, design, construct, and finance wastewater treatment facilities. This option could replace many of the existing entities who are in the wastewater treatment business and could consolidate functions through coordination with a larger entity. It might be possible, given the specialized

WATERSHED BASED CONCEPT

	PLANNING	OPERATIONS MAINTENANCE	DESIGN/ CONSTRUCT	FINANCE	PERMITTING/ REGULATION (POINT SOURCE)	PERMITTING REGULATION (NONPOINT SOURCE)	STANDARD SETTING	ENFORCEMENT	MONITORING	MANAGEMENT COORDINATION
FEDERAL				*	*		*	*	*	
STATE TEXAS DEPARTMENT OF WATER RESOURCES	*		✱	✱	✱	*	✱	✱	*	*
REGIONAL AGENCY	*									✱
WATERSHED DISTRICT	✱	✱	✱	✱	*	*	*	✱	✱	
LOCAL GOVERNMENT (CITY & COUNTY)	*					✱	*			

✱ MAJOR RESPONSIBILITIES

* PARTIAL RESPONSIBILITIES

- SUBREGIONAL ALLOCATION OF OPERATIONAL FUNCTIONS AMONG WATERSHED DISTRICTS
- REGIONAL COORDINATOR REQUIRED
- STATE FULFILLING TRADITIONAL FUNCTIONS

EXHIBIT IV

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nature of the Gulf Coast Waste Disposal Authority, to have them continue the function of treating industrial waste. At the same time, they would operate within the overall coordination and management of the watershed. In the watershed finance would remain, as in the other options, a shared or tripartite function between the federal, State, and local entities.

The permitting and regulation of point sources remains unchanged from the present in this option. The federal and State authority are the primary source of direction, with participation on the watershed level by the sewer district. This approach follows that which is presently performed by the existing local entities.

In the area of permitting and regulation of nonpoint sources, this option does not depart from the existing practices. Local government would retain this authority and would continue to be the primary respondent to nonpoint source problems. The watershed, because of its unique perspective and concern over a larger area, i.e., its growth and conservation, could have a specialized review and comment function in the permitting and regulation of nonpoint sources. The degree to which the watershed district could use such authority could vary, depending upon enabling legislation at the State level. An overall watershed review is contemplated in this third alternative in order to fully effectuate the option.

The standard-setting function, much like that having to do with the permitting and regulation of point sources, recognizes the existing system of federal and State predominance. This option would not alter functional responsibilities. In this option the review and comment function is one that would primarily occur at the watershed level, although the option does recognize that local governments might have specific concerns and could participate in the process.

Enforcement and monitoring are a shared function with the federal and State governments. The watershed would become the major local actor in the monitoring and enforcement area because of its specific concerns and the need for a local respondent to enforce compliance with policy, ordinances, and permits that are expected to be part of the implementation of the 208 plan. The monitoring function is logically handled on a watershed basis for technical reasons, and thus the responsibility could be granted almost exclusively to the watershed (sewer district).

Because of the division of the 208 region into a series of watersheds under this subregional concept, the necessity for regional management and coordination becomes a critical requirement. Thus, in this proposed option, H-GAC could be given the

responsibility of bringing the watershed districts together with other representatives of local government in order to coordinate and manage the implementation of the 208 plan. This option basically builds on the concept which has already been established during the development of the 208 plan. The State, similarly because of its statewide concern, has a role in the coordination and management function regarding this option.

Comment

The advantage of this broad management option is that it localizes authority. Each watershed would have a particular relationship and direct political responsibility to the residents of that watershed. This could reflect and respond to the specific development and ecological aims of that constituency. However, if this option was adopted, the legislature would probably have to create appropriate entities or expand the powers of the existing river authorities in order to guarantee the particular range of powers that would need to be conferred upon the watershed districts. In addition to the problem of securing adequate authority for such districts, the greatest shortcoming of this option is that the existing river authorities lack the tradition to deal with the broad range of problems involved with 208. The river authorities in the past, although they have developed some expertise in the treatment area, generally have not had to handle the wide range of problems that are part of a highly complex planning program such as 208. Another concern that has to be raised is the fact that these river and basin authorities have had limited public exposure in the past. If they were to increase their profile, they could be subjected to political and citizen pressure.

Nevertheless, the watershed option should be considered because of the technical logic and geographic scope. They could have sufficient geographic coverage to adequately perform the wide range of services that are necessary for environmental management under the 208 program. However, the fact that a number of existing entities, such as the special districts and local government entities that are in the wastewater treatment business would be eliminated, has to be recognized as a major impediment to implementation of this option. This form of management and institutional alteration of the existing system might be viewed by many local entities as too severe and would be opposed for that reason. However, any institutional change to implement 208 may face a similar opposition.

CHAPTER VI - COORDINATED PUBLIC SYSTEM

General

The coordinated public system presented in Exhibit V is basically the formalization and coordination of the present system. In this option the increased emphasis on coordination is apparent. This option proposes a limited centralization of particular functions in order to meet the 208 requirements and a recognition of existing operating and political realities for other functions. Thus, this option suggests in the area of planning that H-GAC be granted a regional role in preparing and updating the 208 plan and future plans relating to wastewater management. The option also clearly indicates that many other entities ranging from the State, the cities, and the special districts will and should have a continuing role in the planning process.

The clearest indication of the recognition of the existing nature of wastewater treatment lies in the three interrelated functions of operation and maintenance, design and construction, and finance. In all cases those agencies that presently perform these functions would continue those functions. This option recognizes that there are some agencies who might, for some reason, want to consolidate or transfer their existing operating authority. It also builds upon the expertise of others who have staffs and experience which are in concert with the 208 functions. There is the necessity, however, if there is a continuation of a multiple number of entities operating and maintaining facilities, that these facilities be operated, maintained, designed, and constructed within the parameters of the 208 plan. A supervisory role would have to be created in some agency in order to implement the plan. This could either be at the State level within the Texas Department of Water Resources or, if the concept of localized control were to be carried out as has been proposed in this option, possibly at the regional entity level. The regional entity would share a coordinating and supervisory role with the State as part of its management function and verify that facilities were built and operating consistent with the priorities and plans of the overall 208 planning program. This would be a difficult and new role for an agency such as H-GAC. It may be difficult to handle a management and coordinating role, in addition to planning, under a system of multiple-coordinated entities where numerous entities share significant power in a voluntary system. If this were the case, the State might have to step in through the Department of Water Resources and perform the supervisory functions.

EXHIBIT V

COORDINATED PUBLIC SYSTEM

	PLANNING	OPERATIONS MAINTENANCE	DESIGN/ CONSTRUCT	FINANCE	PERMITTING REGULATION (POINT SOURCE)	PERMITTING REGULATION (NONPOINT SOURCE)	STANDARD SETTING	ENFORCEMENT	MONITORING	MANAGEMENT COORDINATION
FEDERAL				*	*		*	*	*	
STATE										
TEXAS DEPARTMENT OF WATER RESOURCES	*			*	*	*	*	*	*	*
GULF COAST WASTE DISPOSAL AUTHORITY (GCWDA)	*	*	*	*	*			*	*	*
H-GAC	*					*				*
RIVER AUTHORITY	*	*	*	*	*	*	*	*	*	*
LOCAL GOVERNMENT (CITY & COUNTY)	*	*	*	*	*	*	*	*	*	*
SPECIAL DISTRICT	*	*	*	*	*		*	*	*	*

* MAJOR RESPONSIBILITIES
* PARTIAL RESPONSIBILITIES

- AN IMPROVED VERSION OF PRESENT MANAGEMENT SYSTEM
- COMPLEX NUMBER OF AGENCY ACTORS SHARING FUNCTIONAL RESPONSIBILITIES
- HIGH DEGREE OF LOCAL ACTION
- REQUIRES GREAT DEAL OF COORDINATION AT REGIONAL LEVEL
- STATE FULFILLING TRADITIONAL FUNCTIONS

The permitting and regulation of point sources and nonpoint source functions has not been significantly altered from the present system. In the point source area, federal and State presence is clear and would be unaltered. In the nonpoint source area, the 208 plan would envision continuation of primary authority within the local governments. However, this option recognizes the need for further controls and possibly an oversight or supervisory function either at the State or the regional level to assure that the implementation efforts were consistently applied and performed. One possible approach that is shown in Exhibit V is that H-GAC would more directly use its environmental review authority in overseeing the utilization of nonpoint controls by local governments.

The standard-setting function would not be significantly altered from what is presently the case, although there would be a recognition of the need for more local input from a variety of entities. The enforcement and monitoring functions of this option would be similar to the existing system, with heavy reliance upon the State. All agencies that are presently involved in monitoring and enforcement would have to coordinate their efforts to meet the regional goals. While the scattering of monitoring authority seems, even in looking at the matrix, to be unsatisfactory, this option recognizes the necessity for self-monitoring by all agencies that are operating facilities. Major regional monitoring could be handled either by the State or treatment entities.

The major change that has been instituted in this option is that H-GAC, through its Executive Committee, would be granted definite authority to handle management and coordination. Others that could be considered for this responsibility include the City of Houston, Gulf Coast Waste Disposal Authority, and the San Jacinto River Authority. All other agencies who are active in wastewater treatment are participants in the 208 development process. This approach builds upon the fact that all these agencies have been involved in 208 planning process and have been coordinating and cooperating during the development of the 208 plan and program.

Comment.

The most apparent problem with the coordinated multiple entity alternative is that it is extremely complex. It requires a considerable degree of cooperation among the various participating entities. In the absence of a strong management and coordination function by either the State or H-GAC, the multiple-entity approach suffers all the problems of discordancy that the existing system has. On the plus side, this approach does build upon the balance of power among existing agencies and their inherent abilities. Similarly, it builds on a localized base of control, giving due credit

to the necessity for close ties between the planning and management agency and its existing local political base. Thus, in contrast to many of the other alternatives where authority is moved to a higher regional or State level, it is kept at a local level. One point that should be made is that the City of Houston, which is a clear and significant entity in the entire 208 process under this option, could be given the continued control over its own area and the ETJ. Within its own boundaries and the ETJ under this option, the City of Houston could be designated as the responsible entity for not only planning but also the operating and maintenance of treatment facilities. This is in recognition of the City's dominant authority and its strength. The full application of Houston's range of powers and controls could be counterbalanced if the coordinated public option had reviews either at the State or regional level which could, when necessary, override inefficiencies or inabilities to act in any functional area.